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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/608,244

06/27/2003

Ping T. Tang

42P16420

8588

8791

7590

12/10/2004

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EXAMINER

LE, JOHN H

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/608,244

Applicant(s)

TANG, PING T.

Examiner

John H Le

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-5, 11-17 and 23-27 is/are rejected.
- 7) ☒ Claim(s) 6-10, 18-22 and 28-30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/16/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because drawings of Figs. 1, 2, 3, 4A, 4B, 4C, 4D, 5, 6, 7 because lines, numbers, and letters not uniformly thick and well defined, clean, durable, and black (poor line quality). Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application.

### ***Claim Rejections - 35 USC § 102***

2. The requirement for corrected drawings will not be held in abeyance. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 16, and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoffberg et al. (USP 6,418,424).

Regarding claims 1, 16, and 26, Hoffberg et al. disclose a data processing system, comprising: a processor; a memory coupled to the processor (Col.41, lines 50-58); and a process executed by the processor from the memory to cause the processor to identify an operation involving a plurality of input values (e.g.

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(Col.41, lines 50-58), invoke an object associated with the identified operation (e.g. invoke information input by keyboard in computer to display, Col.42, lines 6-9, Col.43, lines 36-41), perform the operation via the invoked object (e.g. Col.43, lines 35-36), and automatically generate, as a part of the operation via the object, accuracy information associated with the operation for each of the plurality of input values (e.g. Col.43, lines 41-47).

Regarding claim 4, Hoffberg et al. disclose the object comprises one or more member functions to perform the operation (multi-function keys, Col.7, lines 52-57) and to substantial concurrently (Col.41, lines 4-8) generate the accuracy information associated with the operation (Col.43, lines 41-47).

Regarding claims 5, 17, and 27, Hoffberg et al. disclose the process further causes the processor to define a computational model (accuracy detector), as a member of the object, to generate the accuracy information for the operation (e.g. Col.88, lines 39-52).

Regarding claim 12, Hoffberg et al. disclose the accuracy information includes differences between a theoretical result and an actual result of the operation (e.g. Col.52, lines 19-42, Col.105, line 60-Col.106, line 17).

Regarding claim 13, Hoffberg et al. disclose the plurality of input values comprises multidimensional vectors of values (e.g. Col.39, lines 51-60).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 14, 15, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffberg et al. (USP 6,418,424) in view of Orton et al. (USP 5,717,877).

Regarding claim 2, Hoffberg et al. fail to disclose creating the object associated with the identified operation and initializing the object using the plurality of input values prior to performing the operation.

Orton et al. disclose creating the object associated with the identified operation and initializing the object using the plurality of input values prior to performing the operation (Col.31, lines 20-25).

Regarding claim 3, Orton et al. disclose receiving the plurality of input values as parts of parameters associated with the object when the object is created (Col.31, lines 26-36).

Regarding claims 14 and 24, Orton et al. disclose the object is invoked via an inheritance of an object oriented programming (OOP) environment (Col.33, lines 50-62).

Regarding claims 15 and 25, Orton et al. disclose overloading an operator associated with the operation via the OOP environment, such that the accuracy information is obtained transparently with respect to the actual operation (e.g. Col.25, lines 46-52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to inform creating the object associated with the identified

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operation and initializing the object using the plurality of input values prior to performing the operation as taught by Orton et al. in a data processing system of Hoffberg et al. for the purpose of providing an innovative object oriented application interface (Orton et al., Col.1, lines 35-37).

6. Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffberg et al. (USP 6,418,424) in view of Anwar (US 5,767,854).

Regarding claims 11 and 23, Hoffberg et al. fail to disclose the operation comprises one of an addition, a multiplication, and a shifting operation.

Anwar discloses the operation comprises one of an addition, a multiplication, and a shifting operation (e.g. Col.4, lines 1-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the operation comprises one of an addition, a multiplication, and a shifting operation as taught by Anwar in a data processing system of Hoffberg et al. for the purpose of providing a user interface and data management system that allow a user to more efficiently visualize, display, manipulate, and analyze multi-dimensional data.

#### ***Other Prior Art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Codella et al. (USP 6,804,818) disclose integration mechanism for object-oriented software and message-oriented software.

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Ishimitsu et al. (US 2004/0205711) disclose system and method for creation of an object within an object hierarchy structure.

***Allowable Subject Matter***

8. Claims 6-10, 18-22, and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6, 18, and 28, none of the prior art of record teaches or suggests the combination of a data processing system, comprising: a processor; a memory coupled to the processor; and a process executed by the processor from the memory to cause the processor to identify an operation involving a plurality of input values, invoke an object associated with the identified operation, perform the operation via the invoked object, and automatically generate, as a part of the operation via the object, accuracy information associated with the operation for each of the plurality of input values, wherein the process further causes the processor to define a computational model, as a member of the object, to generate the accuracy information for the operation, wherein defining the computation model comprises: identifying a theoretical result of the operation based on an input value; defining an input independent error associated with the input value; defining an input dependent error associated with the input value; and obtaining an actual result of the operation based on the theoretical result, the input independent error, and input dependent error. It is these limitations as they

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are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H Le whose telephone number is 571-272-2275. The examiner can normally be reached on 8:00 - 4:30.

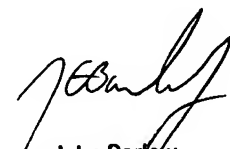
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

December 3, 2004

  
John Barlow  
Supervisory Patent Examiner  
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